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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,081	06/21/2005	Leonardus Hubertus Postma	121640-04338017	9946
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JONES DAY 222 EAST 41ST ST NEW YORK, NY 10017			EXAMINER SHUMATE, ANTHONY R	
			ART UNIT 4112	PAPER NUMBER
			MAIL DATE 04/15/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/509,081

**Applicant(s)**

POSTMA ET AL.

**Examiner**

ANTHONY SHUMATE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 6/21/05, 1/3/05, 9/28/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CS-100)
- Paper No(s)/Mail Date 1/3/05, 9/28/04
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Summary***

1. This is the initial Office action based on the merits on 10/509081 application filed 21 June 2005.
2. The preliminary amendment filed 28 September 2004 has been entered and fully considered.
3. Claims 1-7 are pending and have been fully considered.

### ***Specification***

4. The applicant is reminded of the proper sectioning and arrangement of the specification.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

- (l) **SEQUENCE LISTING** (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

#### **Content of Specification**

- (a) **Title of the Invention**: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) **Cross-References to Related Applications**: See 37 CFR 1.78 and MPEP § 201.11.
- (c) **Statement Regarding Federally Sponsored Research and Development**: See MPEP § 310.
- (d) **The Names Of The Parties To A Joint Research Agreement**: See 37 CFR 1.71(g).
- (e) **Incorporation-By-Reference Of Material Submitted On a Compact Disc**: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.
- (f) **Background of the Invention**: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
- (1) **Field of the Invention**: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
- (2) **Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98**: A description of the related art

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known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international

application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

- (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

5. The disclosure is objected to because the specification elements are not framed in the preferred manner as listed in the MPEP 608.01(a).

Appropriate correction is required.

6. The disclosure is objected to because of the following informalities: "Table I," of the "Arsine removal" column should have a percent (%) sign.

Appropriate correction is required.

7. The disclosure is objected to because full and clear information is missing in regard to Tables I, II, and III. In Tables I, II, and III, the "Arsine removal" columns and the "Mercury removal" columns do not specify the percent basis for the values within the columns. For example, arsine could have been removed on an "arsine removed volume per original arsine volume" basis, or arsine could have been removed on an "arsine removed weight per original arsine weight." The possibilities for what the percent basis of the "Arsine removal" column values and the "Mercury removal" column values are not limited by the previous examples.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 1-7 rejected under 35 U.S.C. 102(b) as being anticipated by NOWACK et al. (EP 488,235 A1).

NOWACK teaches the process of claim 1. NOWACK at page 2, lines 43-44, teaches the process of claim 1 is for the removal of "arsine (AsH<sub>3</sub>)," (claim 1). Also, NOWACK teaches on page 2, lines 14-16 that the process of claim 1 is for, "a hydrocarbon stream" (Claim 1). Additionally, NOWACK generally teaches of a hydrocarbon stream that has, "an atmospheric boiling point lower than about 0° C.," (Claim 1) at page 2, lines 39-40. The compounds listed by NOWACK are known to have an "atmospheric boiling point lower than about 0° C" (Claim 1), because the current application claims the same compounds as in claim 2 (MPEP 2112.01). Finally, NOWACK teaches of the "adsorbent that contains elemental sulphur deposited on a support material," (Claim 1) on page 2, lines 20-21.

For claim 2, as previously discussed in the last paragraph, NOWACK discloses the hydrocarbon stream of the process of claim 2 on page 2, lines 35-40.

For claim 3, NOWACK in page 2, lines 53-55, discloses the particularly preferred amount in NOWACK is 3 to 25 wt. % which anticipates the claimed range (MPEP 2131.03).

For claims 4, NOWACK discloses the support material options of claim 4 on page 2, lines 20-25.

For claim 5, the NOWACK disclosure page 2, lines 20-25 teaches wherein the "support material is activated carbon" as of Claim 5.

For claim 6, NOWACK teaches the process in the claims which claim 6 depends upon. Also, NOWACK teaches that he is aware of the mercury in the stream on page 2, lines 40-41. So, claim 6 of Postma simply identifies an unappreciated inherent function of the process disclosed by NOWACK. Therefore, NOWACK teaches the process of claim 6.

For claim 7, NOWACK in page 2, lines 53-55, discloses the particularly preferred amount in NOWACK is 3 to 25 wt. % which anticipates the claimed range (MPEP 2131.03).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over NOWACK et al. (EP 488,235 A1) as pointed out above, paragraph 9.

In the alternative it would have been obvious to remove any of the impurities from the hydrocarbon gas stream of NOWACK including mercury.



***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The reference ICHIKAWA et al. EP 270,675 A1 discloses a process involving sulfur which is capable of removing arsenic (claims).

The reference Chao S. et al. US 5,330,560 A discloses a process involving sorbent and removal of arsenic (abstract).

The reference Carnell et al. US 6,007,706 A discloses a process involving sulfur which is capable of removing arsenic and mercury (abstract).

The reference Carnell et al. US 6,221,241 B1 discloses a process involving sulfur which is capable of removing arsenic and mercury (abstract).

The reference Cheung et al. US 6,491,887 B1 discloses sulfur compositions capable of trialkyl arsine sorption.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY SHUMATE whose telephone number is (571)270-5546. The examiner can normally be reached on M-Th 9-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Barbara Gilliam can be reached on (517)272-1330. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANTHONY SHUMATE/  
Patent Examiner  
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